

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1 1. (Currently Amended) A wireless audio transmission and reception system  
2 comprising:  
3 a pulse width amplifier to receive an audio signal and a reference  
4 control ramp signal to compare said a voltage level of said audio  
5 signal with said reference control ramp signal to generate a  
6 digital output signal such that a pulse width of said digital output  
7 signal is modulated by ~~and modulate a pulse width of a digital~~  
8 ~~timing signal with~~ said audio signal, such that the pulse width is  
9 proportional to an amplitude of said voltage level of said audio  
10 signal to provide a pulse width modulated signal;  
11 an up-converter in communication with the pulse width amplifier to  
12 receive the pulse width modulated signal and convert said pulse  
13 width modulated signal to a modulated carrier signal;  
14 a transmitter in communication with the modulated carrier signal to  
15 transfer the modulated carrier signal wirelessly;

16 a receiver to receive the modulated carrier signal;

17 a down-converter in communication with the receiver to receive the

18 modulated carrier signal and combine said modulated carrier

19 signal with a receiver local oscillator frequency signal to and

20 extract the pulse width modulated signal from the modulated

21 carrier signal; and

22 an integrator in communication with the down-converter to receive the

23 extracted pulse width modulated signal to remove a timing

24 signal from said extracted pulse width modulated signal to

25 restore the audio signal.

1 2. (Previously Presented) The system of claim 1 further comprising power

2 amplifier in communication with the integrator to receive the audio signal

3 and amplify said audio signal and transfer said amplified audio signal to a

4 transducer.

1 3. (Currently Amended) The system of claim 1 wherein the pulse width

2 amplifier comprises

3 a comparator having a first input to receive the audio signal and a

4 second input to receive the ~~timing signal~~ reference control ramp

5 signal, said ~~timing signal~~ reference control ramp signal having a

6 triangular form such that, as said comparator compares the

7                    audio signal and the ~~timing signal~~ reference control ramp signal,  
8                    the pulse width modulated signal is provided to an output of said  
9                    comparator.

1    4.    (Original) The system of claim 1 wherein the up-converter comprises a  
2           modulation apparatus to combine a carrier frequency with the pulse width  
3           modulated signal to form the modulated carrier signal.

1    5.    (Original) The system of claim 4 wherein the modulation apparatus is  
2           selected from a group of modulation apparatus consisting of frequency  
3           shift keying modulation apparatus, amplitude shift keying modulation  
4           apparatus, phase shift keying modulation apparatus, quadrature phase  
5           shift keying modulation apparatus, time domain multiple access  
6           modulation apparatus, and code domain multiple access modulation  
7           apparatus.

1    6.    (Original) The system of claim 1 wherein the down-converter comprises a  
2           demodulation apparatus to extract the pulse width modulated signal from  
3           the modulated carrier signal.

1    7.    (Original) The system of claim 6 wherein the demodulation apparatus is  
2           selected from a group of demodulation apparatus consisting of frequency  
3           shift demodulation apparatus, amplitude shift keying demodulation  
4           apparatus, phase shift keying demodulation apparatus, quadrature phase  
5           shift keying demodulation apparatus, time domain multiple access

6 demodulation apparatus, and code domain multiple access demodulation  
7 apparatus.

1 8. (Previously Presented) The system of claim 1 wherein the integrator is a  
2 low pass filter having a cut off frequency suitable to pass the audio signal  
3 and remove the timing signal.

1 9. (Original) The system of claim 1 wherein the carrier frequency is at least  
2 900 MHz.

1 10. (Currently Amended) A wireless audio transmitter system comprising:

2 a pulse width amplifier to receive an audio signal and a reference  
3 control ramp signal to compare said a voltage level of said audio  
4 signal with said reference control ramp signal to generate a  
5 digital output signal such that a pulse width of said digital output  
6 signal is modulated by ~~and modulate a pulse width of a digital~~  
7 ~~timing signal with~~ said audio signal, such that the pulse width is  
8 proportional to an amplitude of said voltage level of said audio  
9 signal to provide a pulse width modulated signal;

10 an up-converter in communication with the pulse width amplifier to  
11 receive the pulse width modulated signal and convert said pulse  
12 width modulated signal to a modulated carrier signal; and

13           a transmitter in communication with the modulated carrier signal to  
14           transfer the modulated carrier signal wirelessly.

1    11.   (Currently Amended) The transmitter system of claim 10 wherein the pulse  
2           width amplifier comprises

3           a comparator having a first input to receive the audio signal and a  
4           second input to receive ~~the timing signal~~ said reference control  
5           ramp signal, ~~said timing signal~~ reference control ramp signal  
6           having a triangular form such that, as said comparator  
7           compares the audio signal and ~~the timing signal~~ reference  
8           control ramp signal, the pulse width modulated signal is  
9           provided to an output of said comparator.

1    12.   (Original) The transmitter system of claim 10 wherein the up-converter  
2           comprises a modulation apparatus to combine a carrier frequency with the  
3           pulse width modulated signal to form the modulated carrier signal.

1    13.   (Original) The transmitter system of claim 12 wherein the modulation  
2           apparatus is selected from a group of modulation apparatus consisting of  
3           frequency shift keying modulation apparatus, amplitude shift keying  
4           modulation apparatus, phase shift keying modulation apparatus,  
5           quadrature phase shift keying modulation apparatus, time domain multiple  
6           access modulation apparatus, and code domain multiple access  
7           modulation apparatus.

8 14. The transmitter system of claim 10 wherein the carrier frequency is at  
9 least 900 MHz.

1 15. (Currently Amended) A wireless audio receiver system comprising:

2 a receiver to receive a modulated carrier signal;

3 a down-converter in communication with the receiver to receive the  
4 modulated carrier signal and combine said modulated carrier  
5 signal with a receiver local oscillator frequency signal to extract  
6 a pulse width modulated signal from the modulated carrier  
7 signal; and

8 an integrator in communication with the down-converter to receive the  
9 extracted pulse width modulated signal to remove a timing  
10 signal from said extracted pulse width modulated signal to  
11 restore an audio signal.

1 16. (Original) The receiver system of claim 15 wherein the down-converter  
2 comprises a demodulation apparatus to extract the pulse width modulated  
3 signal from the modulated carrier signal.

1 17. (Original) The receiver system of claim 16 wherein the demodulation  
2 apparatus is selected from a group of demodulation apparatus consisting  
3 of frequency shift demodulation apparatus, amplitude shift keying  
4 demodulation apparatus, phase shift keying demodulation apparatus,

5        quadrature phase shift keying demodulation apparatus, time domain  
6        multiple access demodulation apparatus, and code domain multiple  
7        access demodulation apparatus.

1    18.    (Previously Presented) The receiver system of claim 15 wherein the  
2        integrator is a low pass filter having a cut off frequency suitable to pass  
3        the audio signal and remove the timing signal.

1    19.    (Previously Presented) The receiver system of claim 15 wherein the  
2        carrier frequency is at least 900 MHz.

1    20.    (Currently Amended) A method for wireless transmission of an audio  
2        signal comprising the steps of:

3        acquiring the audio signal;

4        comparing said audio signal with a ~~timing signal~~ reference control ramp  
5        signal;

6        from said comparing, ~~forming a pulse width modulated signal~~

7        generating a digital output signal such that a pulse width of said

8        digital output signal is modulated by said audio signal, such that

9        the pulse width is proportional to an amplitude of said voltage

10       level of said audio signal to provide a pulse width modulated

11       signal;

12 up-converting the pulse width modulated signal to a modulated carrier  
13 signal;  
14 transmitting said modulated carrier signal;  
15 receiving said modulated carrier signal;  
16 down-converting said modulated carrier signal to restore the pulse  
17 width modulated signal by the step of combining said modulated  
18 carrier signal with a receiver local oscillator frequency signal to  
19 extract the pulse width modulated signal from the modulated  
20 carrier signal; and  
21 integrating the restored pulse width modulated signal to remove a  
22 timing signal from said restored pulse width modulated signal to  
23 extract said audio signal.

1 21. (Previously Presented) The method of claim 20 further comprising the  
2 steps of:

3 amplifying the restored audio signal

4 transferring the amplified audio signal to a transducer.

1 22. (Currently Amended) The method of claim 20 wherein the comparing the  
2 audio signal to the timing signal and forming the pulse width modulated  
3 signal comprises the step of:



4                    forming the ~~timing signal~~ reference control ramp signal to have a  
5                    triangular waveform;  
  
6                    comparing the amplitude of the audio signal to the amplitude of the  
7                    triangular waveform;  
  
8                    if the amplitude of the audio signal is greater than the amplitude of the  
9                    timing signal, setting the pulse width modulated signal to a first  
10                  logic level; and  
  
11                  if the amplitude of the audio signal is less than the amplitude of the  
12                  timing signal, setting the pulse width modulated signal to a  
13                  second logic level.

1    23.    (Original) The method of claim 20 wherein the up converting the pulse  
2           width modulating signal to the modulated carrier signal comprises the  
3           steps of  
  
4                  combining a carrier frequency with the pulse width modulated signal to  
5                  form the modulated carrier signal.

1    24.    The method of claim 23 wherein the combining of the carrier frequency  
2           with the pulse width modulated signal is a modulating of the carrier  
3           frequency by the pulse width modulated signals, said modulating being  
4           selected from a group of modulating steps consisting of frequency shift  
5           keying modulating, amplitude shift keying modulating, phase shift keying

6 modulating, quadrature phase shift keying modulating, time domain  
7 multiple access modulating, and code domain multiple access modulating.

1 25. (Currently Amended) The method of claim 20 wherein the down-  
2 converting said modulated carrier signal to restore the pulse width  
3 modulated signal comprises the step of:

4 combining a ~~local oscillator signal~~ receiver local oscillator frequency  
5 signal with the modulated carrier signal to restore the pulse  
6 width modulated signal.

1 26. (Original) The method of claim 23 wherein combining of local oscillator  
2 signal with the carrier frequency is a demodulating of the carrier frequency  
3 to extract the pulse width modulated signals, said demodulating being  
4 selected from a group of demodulating steps consisting of frequency shift  
5 keying demodulating, amplitude shift keying demodulating, phase shift  
6 keying demodulating, quadrature phase shift keying demodulating, time  
7 domain multiple access demodulating, and code domain multiple access  
8 demodulating.

1 27. (Original) The method of claim 20 wherein the carrier signal is at least 900  
2 MHz.